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| 10/623,621  | 07/22/2003  | Hyoscop Shin         | Q76494              | 5040             |
| 23373   | 7590        | 08/18/2006           | EXAMINER            |                  |
| SUGHRUE MION, PLLC<br>2100 PENNSYLVANIA AVENUE, N.W.<br>SUITE 800<br>WASHINGTON, DC 20037 |             |                      | LU, CHARLES EDWARD  |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2163                |                  |

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/623,621 | <b>Applicant(s)</b><br>SHIN, HYOSEOP |  |
|                              | <b>Examiner</b><br>Charles E. Lu     | <b>Art Unit</b><br>2163              |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 54-89 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 54-89 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/9/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment/Response to Arguments*

1. This Action is in response to the amendment dated 6/2/2006. Claims 54-89 are pending. Of these, claims 73-89 are new, and claims 54, 57-58, 63-64, 67, and 70-72 are amended. Claims 54-89 are rejected.

2. Amendment to the drawings is noted. Objection to the drawings is withdrawn.

3. Amendment to the title and specification is noted. Objection to the title is maintained because the title as amended is not sufficiently descriptive of the claimed invention. The following title is suggested:

INDEX STRUCTURE FOR TV-ANYTIME FORUM METADATA USING XPATH  
AND HAVING LOCATION INFORMATION EXPRESSED AS A CODE FOR DEFINING  
A KEY

5. Amendment to the claims for addressing the 35 U.S.C. 112, second paragraph rejection for claims 56-58 and 64 is noted. The 35 U.S.C. 112, second paragraph rejection is withdrawn for claims 56-58 and maintained for claim 64.

Due to amendment, a new 35 U.S.C. 112 rejection is presented below.

6. Remarks concerning the 35 U.S.C. 101 rejection have been fully considered. The 35 U.S.C. 101 rejection for claims 54-72 are maintained. Claims 54-89 are also rejected under 35 U.S.C. 101, detailed below.

7. Regarding the prior art rejection, Applicant argues the claims as amended. As to the argument that Evain does not teach, "the predetermined code is assigned to

said at least a part of the location information according to a convention for associating codes with portions of the metadata,” the examiner respectfully disagrees.

According to Sec. 2.3.2 of Evain, and page 19 of the response dated 6/2/2006, the “fragment\_xpath\_ptr” comprises 16 bits and is a “ushort” identifier. This is according to a convention for associating codes with portions of the metadata. For example, because of this convention for associating codes, it is understood that this code is represented by at least 16 bits and a “ushort” identifier and it is to be associated with portions of the metadata. Furthermore, the code is assigned to at least a part of the location information, as seen throughout Sec. 2.3.2. Therefore, Evain teaches “the predetermined code is assigned to at least a part of the location information according to a convention for associating codes with portions of the metadata”.

It is noted that limitations from Applicant’s disclosure that were described by Applicant in the response dated 6/2/2006 (e.g., see page 19-21 of the response) are not read into the claims.

Therefore, the prior art rejection for at least claims 54-72 is maintained using the prior art of record.

### ***Specification***

The disclosure is objected to because of the following informalities:

The title as amended is not sufficiently descriptive of the claimed invention. The following title is suggested:

INDEX STRUCTURE FOR TV-ANYTIME FORUM METADATA USING XPATH  
AND HAVING LOCATION INFORMATION EXPRESSED AS A CODE FOR DEFINING  
A KEY

Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**8. Claims 54-89 are rejected under 35 U.S.C. 101.**

**As to each independent claim in claims 54-72 as amended**, the “locating” (line 5, claim 72) does not appear to be a tangible result. Locating is interpreted to be an abstract idea. Therefore, the independent claims in claims 54-72 do not produce a useful, concrete, and tangible result. The claims should produce a tangible result, such as storing data or displaying data.

**The dependent claims of claims 54-72 as well as new claims 73-84** are rejected under 35 U.S.C. 101 because they depend from a rejected parent claim and do not cure the parent claim’s deficiencies.

**New claims 85-89** are rejected under 35 U.S.C. 101 because the “locating” in independent claim 85 is interpreted to be an abstract idea. Therefore, the independent claims in claims 86-89 do not produce a useful, concrete, and tangible result.

Art rejection is applied in anticipation of Applicant amending the claims to overcome the rejection under 35 U.S.C. 101 above.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**9. Claims 58 and 86 are rejected under 35 U.S.C. 112, first paragraph, because the claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.**

As to claim 58, for example, "...the location information not expressed as the predetermined code is expressed as another predetermined code". The specification does not appear to mention location information not expressed as the predetermined code, nor expressing in another predetermined code.

As to claim 86, the specification does not appear to mention wherein the encoded value is assigned to the predefined string prior to transmission of the metadata from the provider to the receiver.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**10. Claims 58, 64 and 85-89 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

**As to claim 58**, line 2, the use of the word “among” requires three objects, but only two objects appear to be recited. Furthermore, it is unclear as to what “the location information” in line 3 refers.

**As to claim 64**, the parent claim makes no mention of a key included within a fragment. Therefore, in line 3 of claim 64, “the key included within the fragment” lacks antecedent basis.

**As to claim 85**, line 4-6, use of the word “type” renders the claim indefinite.

**As to claims 86-89**, “the predefined string” lacks antecedent basis.

Art rejection is applied as best understood in light of the rejection under 35 U.S.C. 112 above.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

**11. Claims 54-89 are rejected under 35 U.S.C. 102(a) as being anticipated by Evain (“1<sup>st</sup> Draft of Metadata Specification SP003v1.3,” XP002323574), provided by Applicant.**

**As to claim 54**, Evain teaches an index structure for metadata divided into fragments (fig. 2), comprising a list of keys corresponding to the fields of the metadata (see key index list in fig. 2) and location information for defining a key (see syntax of a

key index list in section 2.3.2, table), and locating a fragment of the metadata (e.g., fig 2 and related code in the document), wherein at least a part of the location information is expressed as a predetermined code (see the program code in the syntax table in section 2.3.2).

The index structure is contained in a computer readable storage medium (see e.g., sec. 2.1) and the predetermined code is assigned to the at least a part of the location information according to a convention for associating codes with portions of the metadata. For example, according to Sec. 2.3.2 of Evain, the “fragment\_xpath\_ptr” comprises 16 bits and a “ushort” identifier. This has to be according to a convention for associating codes with portions of the metadata. Because of this convention for associating codes, it is understood that this code is represented by at least 16 bits and a “ushort” identifier and it is to be associated with portions of the metadata. Furthermore, the code is assigned to at least a part of the location information, as seen throughout Sec. 2.3.2.

**As to claim 55**, Evain teaches wherein the location information comprises location information of a fragment including the keys and location information of the keys within the fragment (see fig. 2 and table in section 2.3.2 of identifiers).

**As to claim 56**, Evain teaches wherein one of the location information of the fragment and the location information of the key is expressed as the predetermined code (see syntax table in section 2.3.2 and fig. 2)

**As to claim 57**, Evain teaches wherein the predetermined code comprises additional information in a language for addressing parts of a markup language



document, wherein the location of one of the fragments and the key expressed as a predetermined code corresponds to a user defined type. In this case, see the X Path (see section 2.3.1.1).

**As to claim 58**, Evain teaches wherein among the location information of the fragment and the location information of the key, the location information not expressed as the predetermined code is expressed as another predetermined code (e.g., bytes, see sec. 2.3.2).

**As to claim 59**, Evain teaches values of the keys and identification information on the metadata corresponding to the values of the keys (identifiers, again see fig. 2, and section 2.3.2 table).

**As to claim 60**, Evain teaches a sub section including ranges of values of the key and the identification information on ones of the fragments of the metadata corresponding to the values of the key (see section 2.3.3 – 2.3.4).

Evain further teaches wherein the key index section comprises representative key values representing the respective ranges of values of the key (also see section 2.3.3 – 2.3.4).

**As to claim 61**, Evain teaches wherein the list includes identification information on the key index section (fig. 2, key index list has a key\_index\_identifier), and the section further comprises identification information on the sub-key index section (fig. 2, key index has a sub\_index\_identifier).

**As to claim 62**, Evain teaches wherein each of the representative key values is a value among the corresponding range of values of the key (see section 2.3.3).

**As to claim 63**, Evain teaches an index structure for metadata divided into fragments (fig. 2) comprising a key index section comprising a list of keys corresponding to the fields of the metadata (see key index list in fig. 2) and location information for defining the keys (see syntax of a key index list in section 2.3.2, table), and locating a fragment of the metadata (e.g., fig 2 and related code in the document), wherein at least a part of the location information is expressed as a predetermined code (see the program code in the syntax table in section 2.3.2).

The index structure is contained in a computer readable storage medium (see e.g., sec. 2.1) and the predetermined code is assigned to the at least a part of the location information according to a convention for associating codes with portions of the metadata. For example, according to Sec. 2.3.2 of Evain, the "fragment\_xpath\_ptr" comprises 16 bits and a "ushort" identifier. This has to be according to a convention for associating codes with portions of the metadata. Because of this convention for associating codes, it is understood that this code is represented by at least 16 bits and a "ushort" identifier and it is to be associated with portions of the metadata. Furthermore, the code is assigned to at least a part of the location information, as seen throughout Sec. 2.3.2.

Evain further teaches a key index section (see fig. 2, key index) and sub-key index section (also see fig. 2, sub key index).

Evain further teaches wherein for a key of the key index list the sub-key index section comprises ranges of values of the key and the identification information on ones

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of the fragments of the metadata corresponding to the values of the key (see section 2.3.3 – 2.3.4).

Evain further teaches wherein the key index section comprises representative key values representing the respective ranges of values of the key (also see section 2.3.3 – 2.3.4).

**As to claim 64**, Evain teaches wherein the location information comprises location information of a fragment including the keys and location information of the keys included within the fragment (see fig. 2 and table in section 2.3.2).

**As to claim 65**, Evain teaches a corresponding key index section and a corresponding sub key index section for another key of the key index list (see syntax table 2.3.2, fig. 2, note that a key index contains references to a sub key index, section 2.3.3).

**As to claim 66**, Evain teaches the key index section comprises identification information on the key index section (fig. 2, key index list has a key\_index\_identifier), and the key index section further comprises identification information on the sub-key index section (fig. 2, key index has a sub\_index\_identifier).

**As to claim 67**, Evain teaches an index structure for metadata divided into fragments (fig. 2) comprising a list of keys corresponding to the fields of the metadata (see key index list in fig. 2) and location information for defining the keys (see syntax of a key index list in section 2.3.2, table), wherein at least a part of the location information is expressed as a predetermined code (see the program code in the syntax table in section 2.3.2).

The index structure is contained in a computer readable storage medium (see e.g., sec. 2.1) and the predetermined code is assigned to the at least a part of the location information according to a convention for associating codes with portions of the metadata. For example, according to Sec. 2.3.2 of Evain, the "fragment\_xpath\_ptr" comprises 16 bits and a "ushort" identifier. This has to be according to a convention for associating codes with portions of the metadata. Because of this convention for associating codes, it is understood that this code is represented by at least 16 bits and a "ushort" identifier and it is to be associated with portions of the metadata. Furthermore, the code is assigned to at least a part of the location information, as seen throughout Sec. 2.3.2.

Evain further teaches values of the keys and identification information concerning the metadata corresponding to the values of the keys (identifiers, again see fig. 2, and section 2.3.2 table) for locating a fragment of the metadata (e.g., fig 2 and related code in the document).

**As to claim 68**, Evain teaches wherein the identification information comprises identification information on the fragments of the metadata corresponding to the values of the keys (the identifier in the key index list identifies the key index corresponding to the value of the identifier, fig. 2, section 2.3.2 table).

**As to claim 69**, Evain teaches wherein the metadata has a structure as defined by the TV Anytime Forum (e.g., section 2.2).

**As to claim 70**, Evain teaches all of the claimed subject matter including:

A data structure for storing an index for metadata divided into fragments (fig. 2), the index provided to search the metadata (section 2.3.1), the data structure comprising a list of keys corresponding to the fields of the metadata (see key index list in fig. 2) and location information for defining a key (see syntax of a key index list in section 2.3.2, table), and locating a fragment of the metadata (e.g., fig 2 and related code in the document) wherein at least a part of the location information is expressed as a predetermined code (see the program code in the syntax table in section 2.3.2).

The index structure is contained in a computer readable storage medium (see e.g., sec. 2.1) and the predetermined code is assigned to the at least a part of the location information according to a convention for associating codes with portions of the metadata. For example, according to Sec. 2.3.2 of Evain, the "fragment\_xpath\_ptr" comprises 16 bits and a "ushort" identifier. This has to be according to a convention for associating codes with portions of the metadata. Because of this convention for associating codes, it is understood that this code is represented by at least 16 bits and a "ushort" identifier and it is to be associated with portions of the metadata. Furthermore, the code is assigned to at least a part of the location information, as seen throughout Sec. 2.3.2.

**As to claim 71**, Evain teaches all the claimed subject matter including:

A data structure for storing an index for metadata divided into fragments (fig. 2), the index provided to search the metadata (section 2.3.1), the data structure comprising a key index list section comprising a list of keys corresponding to the fields of the metadata (see key index list in fig. 2) and location information for defining the keys (see

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syntax of a key index list in section 2.3.2, table), and locating a fragment of the metadata (e.g., fig 2 and related code in the document) wherein at least a part of the location information is expressed as a predetermined code (see the program code in the syntax table in section 2.3.2).

The index structure is contained in a computer readable storage medium (see e.g., sec. 2.1) and the predetermined code is assigned to the at least a part of the location information according to a convention for associating codes with portions of the metadata. For example, according to Sec. 2.3.2 of Evain, the "fragment\_xpath\_ptr" comprises 16 bits and a "ushort" identifier. This has to be according to a convention for associating codes with portions of the metadata. Because of this convention for associating codes, it is understood that this code is represented by at least 16 bits and a "ushort" identifier and it is to be associated with portions of the metadata. Furthermore, the code is assigned to at least a part of the location information, as seen throughout Sec. 2.3.2.

Evain further teaches a key index section (see fig. 2, key index) and sub-key index section (also see fig. 2, sub key index).

Evain further teaches wherein for a key of the key index list the sub-key index section comprises ranges of values of the key and the identification information on ones of the fragments of the metadata corresponding to the values of the key (see section 2.3.3 – 2.3.4).

Evain further teaches wherein the key index section comprises representative key values representing the respective ranges of values of the key (also see section 2.3.3 – 2.3.4).

**As to claim 72**, Evain teaches all of the claimed subject matter including:

A data structure for storing an index for metadata divided into fragments (fig. 2), the index provided to search the metadata (section 2.3.1), the data structure comprising a list of keys corresponding to the fields of the metadata (see key index list in fig. 2) and location information for defining the keys (see syntax of a key index list in section 2.3.2, table), wherein at least a part of the location information is expressed as a predetermined code (see the program code in the syntax table in section 2.3.2).

The index structure is contained in a computer readable storage medium (see e.g., sec. 2.1) and the predetermined code is assigned to the at least a part of the location information according to a convention for associating codes with portions of the metadata. For example, according to Sec. 2.3.2 of Evain, the “fragment\_xpath\_ptr” comprises 16 bits and a “ushort” identifier. This has to be according to a convention for associating codes with portions of the metadata. Because of this convention for associating codes, it is understood that this code is represented by at least 16 bits and a “ushort” identifier and it is to be associated with portions of the metadata. Furthermore, the code is assigned to at least a part of the location information, as seen throughout Sec. 2.3.2.

Evain further teaches values of the keys and identification information concerning the metadata corresponding to the values of the keys (identifiers, again see fig. 2, and

section 2.3.2 table) for locating a fragment of the metadata (e.g., fig 2 and related code in the document).

**As to claims 73, 75, 77, 79, 81, and 83**, Evain further teaches wherein the location information to which the predetermined code is assigned corresponds to a path from a root node in the metadata to a metadata fragment containing the key (see Sec. 2.3.1.1).

**As to claims 74, 76, 78, 80, 82, and 84**, Evain further teaches wherein the location information is an XPath expression (e.g., see sec. 2.3.1.1).

**As to claim 85**, the subject matter in the preamble is discussed above. As to “transmitted from provider to receiver”, see sec. 2.3.1.1 and note that the data has to be transmitted from a provider to a receiver for the system to be functional.

Evain further teaches a fragment type field containing an encoded value assigned to a standard fragment type specifying a location of the fragment, wherein the encoded value is assigned to the standard fragment type according to a convention for specifying standard fragment types, and a key descriptor field containing location information specifying a location of a key for the index relative to the location of the fragment indicated by the fragment type field. See at least sec. 2.3.1.1- 2.3.2.

**As to claim 86**, Evain further teaches wherein the encoded value is assigned to a predefined string prior to transmission of the metadata from the provider to the receiver (see sec. 2.1).

**As to claims 87-89**, Evain further teaches wherein a predefined string specifying a location of the fragment is a path from a root node in the metadata to a metadata



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fragment containing the key, is an XPath expression, and wherein the metadata has a structure of metadata as defined by the TV-Anytime Forum (e.g., sec. 2.3.1, 1.1.1).

**Conclusion**

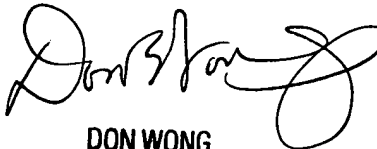
Applicant's arguments were fully considered but were not persuasive. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Lu whose telephone number is (571) 272-8594. The examiner can normally be reached on 8:30 - 5:00; M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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